

217/782-2113

FEDERALLY ENFORCEABLE STATE OPERATING PERMIT - REVISED

PERMITTEE

Solar Communications
Attn: Anthony D. Antonellis
1120 Frontenac Road
Naperville, Illinois 60563

<u>Application No.:</u> 91120052	<u>I.D. No.:</u> 043065ACQ
<u>Applicant's Designation:</u> PRINTINGOP	<u>Date Received:</u> March 27, 2007
<u>Subject:</u> Printing Plant	
<u>Date Issued:</u> May 25, 2007	<u>Expiration Date:</u> April 21, 2011
<u>Location:</u> 1120 and 1150 Frontenac Road, Naperville	

This permit is hereby granted to the above-designated Permittee to OPERATE emission source(s) and/or air pollution control equipment consisting of four heatset web offset lithographic printing presses controlled by a regenerative thermal oxidizer, one sheet-fed offset lithographic printing press, two flexographic printing lines controlled by a catalytic oxidizer, two flexographic printing lines, four non-contact printers and a waste paper collection system controlled by filter as described in the above-referenced application. This Permit is subject to standard conditions attached hereto and the following special condition(s):

- 1a. This federally enforceable state operating permit is issued:
 - i. To limit the emissions of air pollutants from the source to less than major source thresholds (i.e., 100 tons/year for volatile organic material (VOM)). As a result, the source is excluded from the requirement to obtain a Clean Air Act Permit Program (CAAPP) permit.
 - ii. To limit the potential emissions of VOM from the source to less than 25 tons/year. As a result, the source is excluded from the requirement of 35 Ill. Adm. Code Part 205, Emission Reduction Market System. The maximum emissions of this source, as limited by the conditions of this permit, are described in Attachment A.
 - b. Prior to the initial issuance of a FESOP to this source, a draft of this permit has undergone a public notice and comment period.
 - c. This permit supersedes all operating permit(s) for this location.
2. This permit is issued based on the lithographic printing presses being subject to the emission limitations and control requirements of 35 Ill. Adm. Code 218.407 and shall comply with the following requirements:
 - a. For heatset press:

- i. The total VOM content by volume in the as-applied fountain solution is 1.6 percent or less, or 5 percent or less and fountain solution contains no alcohol;
 - ii. The air pressure in the dryer is maintained lower than the air pressure of the press room, such that air flow through all openings in the dryer, other than the exhaust, is into the dryer at all times when the printing line is operating;
 - iii. An afterburner is installed and operated so that VOM emissions from the press dryer exhaust(s) are reduced by 90 percent, by weight;
 - iv. The afterburner is equipped with Illinois EPA and USEPA approved continuous monitor that measures the combustion chamber temperature. It shall be installed, calibrated, maintained, and operated in accordance with the manufacturer's specifications and shall have an accuracy of 3°C or 5°F. Monitoring shall be performed at all times when the afterburner is operating;
 - v. Monitoring device is equipped with a continuous recorder of the temperature, such as a strip chart recorder or computer, with at least the same accuracy as the temperature monitor. It shall be installed, calibrated, operated and maintained, in accordance with manufacturer's specifications; and
 - vi. The afterburner is operated at all times when at least one printing line is in operation.
 - b. Non-heatset sheet-fed press:
 - i. The VOM content of the as-applied fountain solution is 5 percent or less, by volume;
 - c. Any lithographic printing presses:
 - i. The VOM content of the as-used cleaning solution is less than or equal to 30 percent, by weight; or
 - ii. The VOM composite partial vapor pressure of the as-used cleaning solution is less than 10 mmHg at 20°C (68°F).
 - d. The VOM containing cleaning materials, including used cleaning towels, associated with any lithographic printing line are kept, stored or disposed of in any manner other than in closed containers.
3. This permit is issued based upon the flexographic printing operations not being subject to the VOM control requirements of 35 Ill. Adm. Code 218.401: Flexographic and Rotogravure Printing. This is consequence

of the maximum theoretical emission and potential to emit of VOM being limited to less than applicability thresholds of 100 and 25 tons per year, respectively, specified in Section 218.401(a).

- 4a. The catalytic afterburner controlling two flexographic printing presses shall be equipped with Illinois EPA and USEPA approved continuous monitor that measures the temperature rise across each catalytic afterburner bed. It shall be installed, calibrated, maintained, and operated in accordance with the manufacturer's specifications. Monitoring shall be performed at all times when the afterburner is operating.
- b. Monitoring device shall be equipped with a continuous recorder of the temperature, such as a strip chart recorder or computer, with at least the same accuracy as the temperature monitor. It shall be installed, calibrated, operated and maintained, in accordance with manufacturer's specifications.
- 5a. This permit is issued based on the coating operations performed on the printing presses being subject to the VOM emission limitations of 35 Ill. Adm. Code 218.204(c) expressed in units of VOM per volume of coating (minus water and any compounds which are specifically exempted from the definition of VOM) as applied at each coating applicator, except where noted. Compounds which are specifically exempted from the definition of VOM should be treated as water for the purpose of calculating the "less water" part of the coating composition. The emission limitations are as follows:

	<u>kg/l</u>	<u>lb/gal</u>
Paper Coating	0.28	(2.3)

- b. As an alternative the compliance may be achieved pursuant to 35 Ill. Adm. Code 218.207(b)(1) through the use of capture system and control device which provide 81 percent reduction in the overall VOM emissions and a control device provides 90 percent efficiency.
- 6. The VOM emissions from the lithographic, flexographic and non-contact printing, coating and clean-up operations shall not exceed 2.0 tons/month and 20.2 tons/year. The VOM emissions shall be calculated using the following equations:

- a. From the lithographic heatset printing presses:

$$E = \sum [I_i \times V_{Ii} \times 0.8 \times (1-0.95)] + \sum [FS_j \times V_{FSj} \times (1-0.7 \times 0.95)] + \sum [CS_k \times V_{CSk} \times (1-0.4 \times 0.95)] + \sum [BW_l \times V_{Bwl} \times 0.5] + \sum [C_m \times V_{Cm} \times (1-0.95)];$$

- b. From the lithographic non-heatset printing presses:

$$E = \sum (I_n \times V_{In} \times 0.05) + \sum (S_p \times V_{Sp}) - (W \times C_w),$$

where:

E - VOM emissions (tons);
 I_i - heatset ink usage (tons);
 V_{Ii} - VOM content of heatset ink (weight fraction);
 FS_j - heatset fountain solution usage (tons);
 V_{FSj} - VOM content of heatset fountain solution (weight fraction);
 CS_k - heatset automatic cleaning solution usage (tons);
 V_{CSk} - VOM content of heatset automatic cleaning solution (weight fraction);
 BW_l - heatset blanket wash cleaning solution usage (tons);
 V_{BWl} - VOM content of heatset blanket wash cleaning solution (weight fraction);
 C_m - heatset coating usage (tons);
 V_m - VOM content of heatset coating (weight fraction);
 I_n - non-heatset ink usage (tons);
 V_{In} - VOM content of non-heatset ink (weight fraction);
 S_p - other VOM-containing materials usage on the non-heatset printing presses (fountain and cleaning solutions and coatings) (tons);
 V_{Sp} - VOM content of other non-heatset materials (weight fraction);
 W - Certified amount of shipped-off waste materials;
 C_w - VOM content of shipped-off waste materials.

- c. From the flexographic and non-contact printing presses and clean-up operations:

$$E = \sum[(I_i \times C_{Ii}) \times (1 - 0.74)] + \sum[(M_j \times C_{Mj})] - (W \times C_w),$$

where:

E - VOM emissions (tons);
 I_{Ii} - ink usage on the controlled flexographic printing presses (tons);
 C_{Ii} - VOM content of the ink used on the controlled presses (fraction);
 M_j - usage of other materials (tons);
 C_{Mj} - VOM content of other materials (fraction);
 W - certified amount of shipped-off waste (tons);
 C_w - certified VOM content of shipped-off waste.

These limits are based on the maximum production rate, 20% of lithographic ink's VOM retention for heatset presses and 95% for non-heatset printing presses, 100% capture of ink VOM, 70% of fountain solution and 40% of cleaning solvent on the heatset printing presses and 95% destruction efficiency of the lithographic presses afterburner and 50% VOM retention of blanket wash solvent in the cleaning towels on the lithographic printing presses, and 74% overall control efficiency of the afterburner on the flexographic printing presses. Compliance with annual limits shall be determined from a running total of 12 months of data.

7. Operation and emissions of the natural gas firing equipment (combined) shall not exceed the following limits:

Natural Gas Usage: 5 mmscf/month, 40 mmscf/year

<u>Pollutant</u>	<u>Emission Factor (Lbs/mmscf)</u>	<u>Emissions</u>	
		<u>(Tons/Mo)</u>	<u>(Tons/Yr)</u>
Nitrogen Oxides (NO _x)	100	0.3	2.0
Carbon Monoxide (CO)	84	0.2	1.7
Particulate Matter (PM)	7.6	0.02	0.2
Volatile Organic Material (VOM)	5.5	0.01	0.1

These limits define the potential emissions of the fuel combustion equipment and are based on actual emissions determined from the maximum firing rate, the combustion of natural gas and standard emission factors. Compliance with annual limits shall be determined on a monthly basis from the sum of the data for the current month plus the preceding 11 months.

8. The emissions of Hazardous Air Pollutants (HAPs) as listed in Section 112(b) of the Clean Air Act shall not equal or exceed 10 tons per year of any single HAP or 25 tons per year of any combination of such HAPs, or such lesser quantity as USEPA may establish in a rule which would require the Permittee to obtain a CAAPP permit from the Agency. As a result of this condition, this permit is issued based on the emissions of any HAP from this source not triggering the requirement to obtain a CAAPP permit from the Agency.
9. This permit is issued based on negligible emission of particulate matter from the waste paper collection system. For this purpose, emission shall not exceed a nominal emission rate of 0.1 lb/hour and 0.44 tons/year.
10. The Permittee shall maintain daily records of the following items:
 - a. A log of operating time for the afterburners, monitoring equipment, and the associated printing line;
 - b. A maintenance log for the afterburner and monitoring equipment detailing all routine and non-routine maintenance performed, including dates and duration of any outages;
 - c. A log detailing checks on the air flow direction or air pressure of the dryer and press room to insure compliance with the requirements of Section 218.407(a)(1)(B) at least once per 24-hour period while the line is operating;
 - d. The name and identification of each batch of fountain solution prepared for use on one or more lithographic printing lines, the lithographic printing line(s) or centralized reservoir using such

- batch of fountain solution, and the applicable VOM content limitation for the batch;
- e. Date and time of preparation and each subsequent modification of the batch of fountain solution;
 - f. Volume and VOM content of each component used in, or subsequently added to, the fountain solution batch;
 - g. Calculated VOM content of the as-applied fountain solution;
 - h. The name and identification of each cleaning solution;
 - i. Date and time of preparation, and each subsequent modification, of the batch of cleaning solution; and
 - j. The molecular weight, density, and VOM composite partial vapor pressure of each cleaning solvent.
13. The Permittee shall maintain monthly records of the following items:
- a. Names and amounts of inks, fountain solutions, coatings and clean-up solvents used (tons/month, tons/year), separately for each group of printing presses;
 - b. VOM and HAP content of materials in item (a) (weight %);
 - c. Certified records of amount of waste solvent shipped-off (tons) and its VOM and HAP content (weight %); and
 - d. VOM and HAP emissions with supporting calculations (tons/month, tons/year).
14. All records and logs required by this permit shall be retained at a readily accessible location at the source for at least five years from the date of entry and shall be made available for inspection and copying by the Illinois EPA and USEPA upon request. Any records retained in an electronic format (e.g., computer) shall be capable of being retrieved and printed on paper during normal source office hours so as to be able to respond to an Illinois EPA request for records during the course of a source inspection.
15. If there is an exceedance of or deviation from the requirements of this permit as determined by the records required by this permit, the Permittee shall submit a report to the Illinois EPA's Compliance and Enforcement Section in Springfield, Illinois within 30 days after the exceedance/deviation. The report shall include the emissions released in accordance with the recordkeeping requirements, a copy of the relevant records, and a description of the exceedances or deviation and efforts to reduce emissions and future occurrences.

16. Two (2) copies of required reports and notifications shall be sent to:

Illinois Environmental Protection Agency
Division of Air Pollution Control
Compliance and Enforcement Section (#40)
P.O. Box 19276
Springfield, IL 62794-9276

and one (1) copy shall be sent to the Illinois EPA's regional office at the following address unless otherwise indicated:

Illinois Environmental Protection Agency
Division of Air Pollution Control
9511 West Harrison
Des Plaines, Illinois 60016

This permit has been revised to reflect replacement of the catalytic afterburner controlling four lithographic printing presses with regenerative thermal oxidizer and revising plant emissions.

If you have any questions on this permit, please call Valeriy Brodsky at 217/782-2113.

Edwin C. Bakowski, P.E.
Acting Manager, Permit Section
Division of Air Pollution Control

ECB:VJB:psj

cc: IEPA, FOS Region 1
Lotus Notes

Attachment A - Emissions Summary

This attachment provides a summary of the maximum emissions from printing plant operating in compliance with the requirements of this federally enforceable permit. In preparing this summary, the Agency used the annual operating scenario which results in maximum emissions from such a plant. The resulting maximum emissions are below the levels (25 tons per year of VOM, 10 tons/year for a single HAP and 25 tons/year for totaled HAPs) at which this source would be considered a major source for purposes of the Clean Air Act Permit Program. Actual emissions from this source will be less than predicted in this summary to the extent that less material is used and control measures are more effective than required in this permit.

<u>Emission Units</u>	<u>Emissions (Tons/Year)</u>					
	<u>VOM</u>	<u>NO_x</u>	<u>CO</u>	<u>PM</u>	<u>Single HAP</u>	<u>Total HAP</u>
Printing Operations	20.2	----	----	----	----	----
Paper Collection System	----	----	----	0.4	----	----
Combustion Equipment	0.1	2.0	1.7	0.2	----	----
Plant-Wide	----	----	----	----	< 10	< 25
Total	20.3	2.0	1.7	0.6	< 10	< 25

ECB:VJB:psj